Buena Vista Ford Bridge
Spanning Round Lick Creek on McClanahan Road
Carthage vicinity
Smith County
Tennessee

HAER No. TN-18

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Southeast Region
National Park Service
Department of the Interior
Atlanta, Georgia 30303

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HISTORIC AMERICAN ENGINEERING RECORD

Buena Vista Ford Road Bridge

HAER No. TN-18

Location:	Spanning Round Lick Creek on McClanahan Road Carthage vicinity, Smith County, Tennessee
Date of Construction:	1907
Present Owner:	Smith County Government Carthage, Tennessee
Present Use:	Vehicular bridge
Significance:	The bridge is significant for its unusually long length for a Pony Pratt truss and for its "fish-bellied" bottom chords. The bridge also derives significance from its association with the W. T. Young Bridge Company, a native Tennessee bridge company.
Historian:	Martha Carver Tennessee Department of Transportation August 1985

The Buena Vista Ford Road Bridge is located in a rural section of southwest Smith County in middle Tennessee. The area around the bridge contains little development; the terrain is rolling to hilly. The bridge located on McClanahan Road west of the community of Grant. It is significant as an unaltered representative example of a Pony Pratt truss. It derives additional significance for ite length, its atypical design features, and for its association with the W. T. Young Bridge, a native Tennessee bridge company.

The Buena Vista Ford Road Bridge was erected in 1907 by the W. T. Young Bridge Company of Nashville, Tennessee.[1] Young practiced in Tenneeeee during the early twentieth century. Between 1906 and 1922, he operated his own bridge company in Nashville and, after 1922, his firm merged with the Nashville Bridge Company. The original cost of the bridge included $1,395.00 to the W. T. Young Bridge Company for the superstructure and $295.00 for "three pillars" to T. G. Ford. Members of the bridge committee were J. R. Curtie, R. M. Baird, and F. E. Bell.[2]

The Buena Vieta Ford Road Bridge is composed of two steel I-beam epane and one pony truss epan on a masonry substructure. The bridge is 125.6 feet in length and contains three spans. The main and centrally located span is a pin-connected steel pony Pratt truss that is 85.0 feet long. This truss is flanked on either end by steel I-beam spans; span one (western end) is 20.9 feet in length between the pier and abutment and span three (eastern end) is 11.8 feet. The trues epan is 85.0 feet in length and 8.7 feet in height. The curb-to-curb width is 10.1 feet, and the out-to-out width is 12.1 feet. The substructure contains two abutments and two piers of masonry construction.

The truss span is composed of steel members. The top chords and endposts are joined with cover plates and are made up of channele with cross lacing on the top and stay plates underneath. The bottom chords are paired rectilinear eyebars of the unusual "fish-bellied" configuration. The vertical members are paired angles with lacing. The diagonals are paired rectilinear eyerods; counters are single rectilinear tierods.

Several aspects of the design of the bridge are somewhat atypical. At 85 feet, the truss is virtually the maximum length that a lightweight pin-connected pony Pratt truss can safely be built. Also, the top chords and endposts are composed of channels with lacing on the top and battens underneath (rather than the more common design of channels with lacing or battens used only underneath). Yet, the more unusual feature of the bridge is its "fish-bellied" bottom chord. Instead of extending in a straight line above the floor beams, the bottom chords extend diagonally downward below each end panel to a point beneath the floor beems and then across the remainder of the length of the bridge parallel with the top chord.

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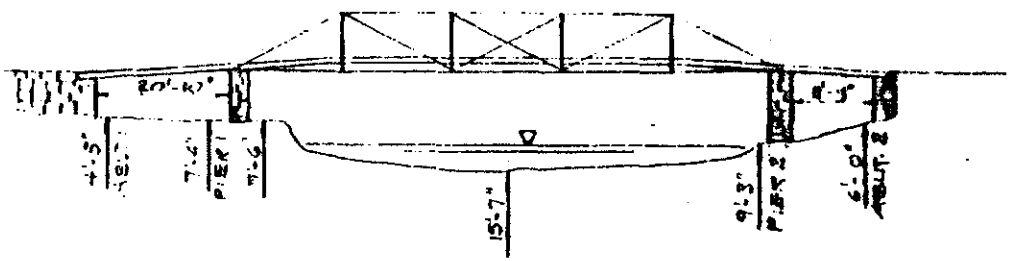
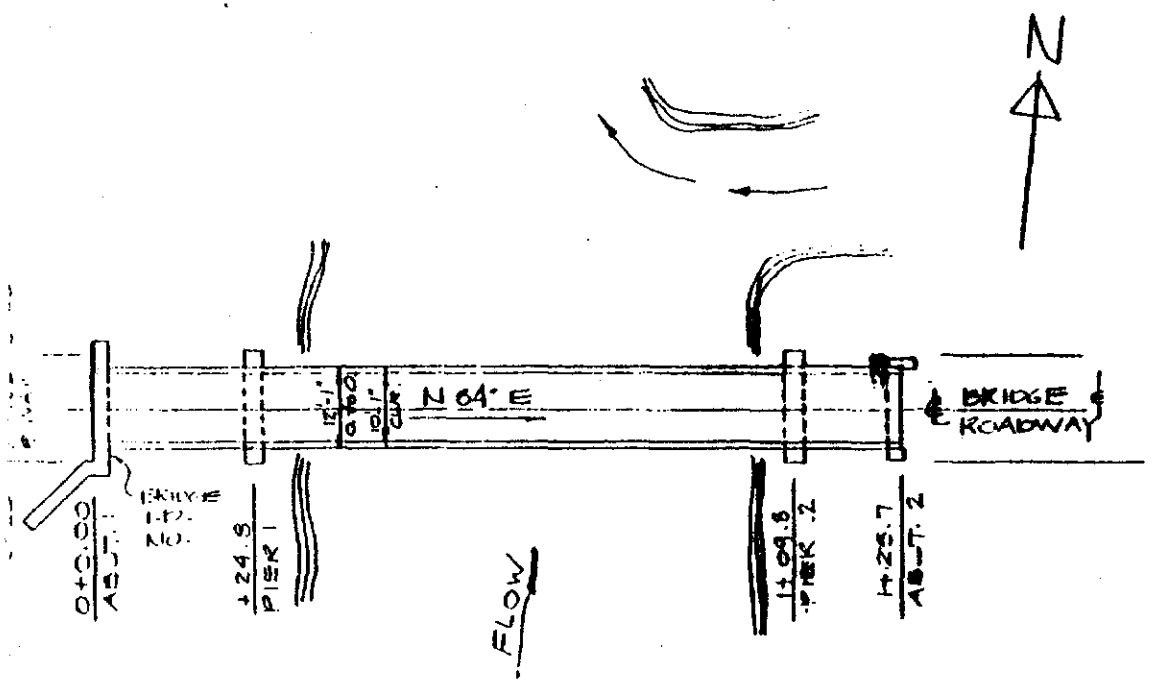
[1] Smith County Court Minutes, (microfilm, Tenneesee State Library and Archives), Roll 53, Volume II, pp. 10, 70-71, 232, 519.

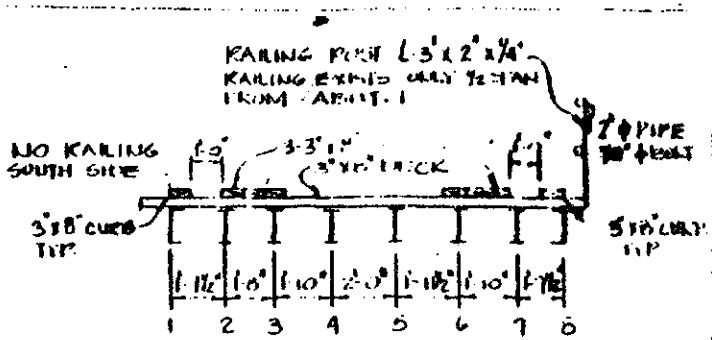
[2] Ibid, Volume 12, p. 119.



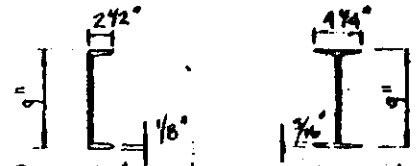
ELEVATION

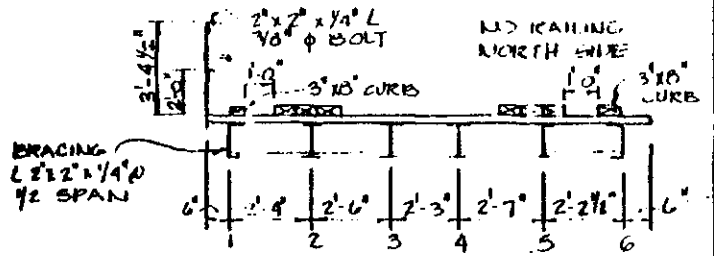


PLAN



SECTION THRU DECK & SPAN 1
LOOKING TOWARD ABUTMENT 1

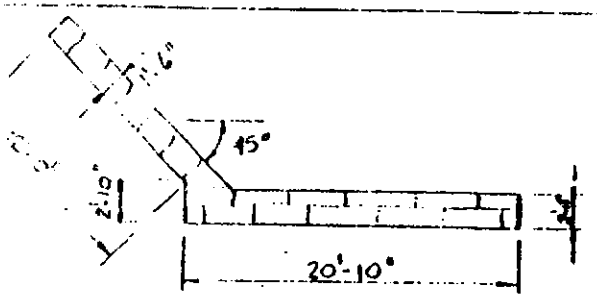




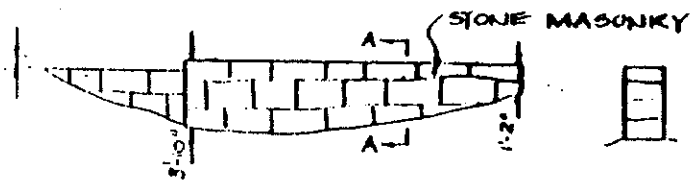
SECTION THRU DECK & SPAN 2
LOOKING WEST

SEE SHEET 3 OF 4 FOR PLAN DETAILS

LAYOUT OF BRIDGE & SUPERSTRUCTURE DETAILS
BRIDGE NO. 80-A206-0.47
OVER ROUND LICK CREEK
SMITH COUNTY
SHEET 1 of 4

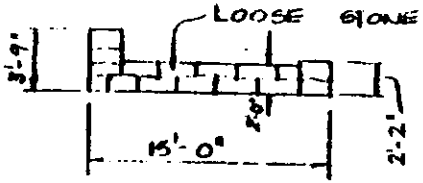


PLAN

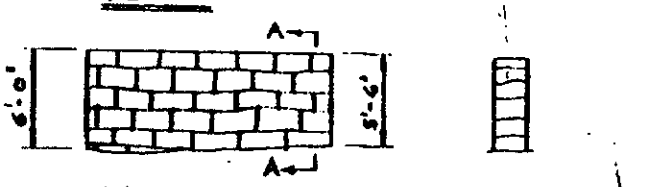


ELEVATION ABUT. 1 (LOOKING WEST)

SECT. AA

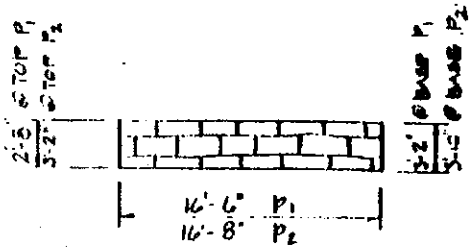


PLAN

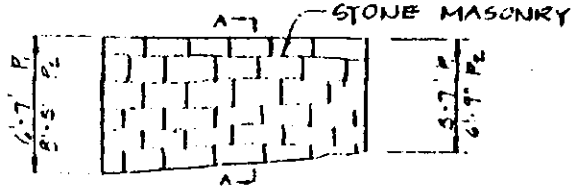


ELEVATION ABUT. 2 (LOOKING EAST)

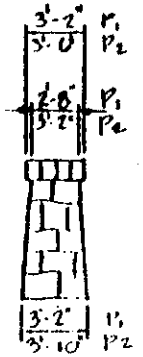
SECT. AA



PLAN



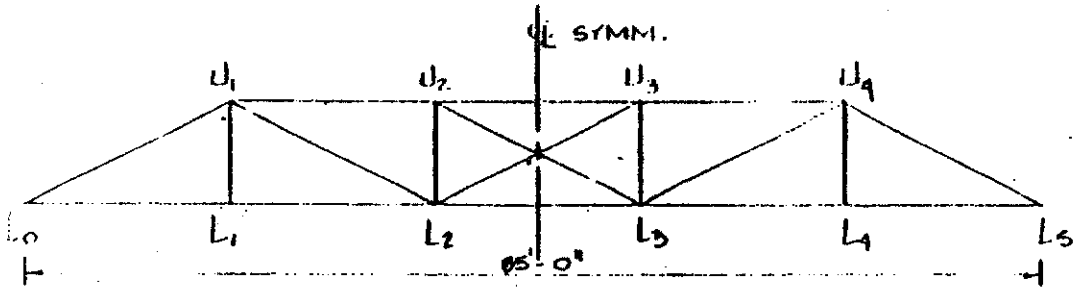
ELEVATION PIER 1 (LOOKING EAST)



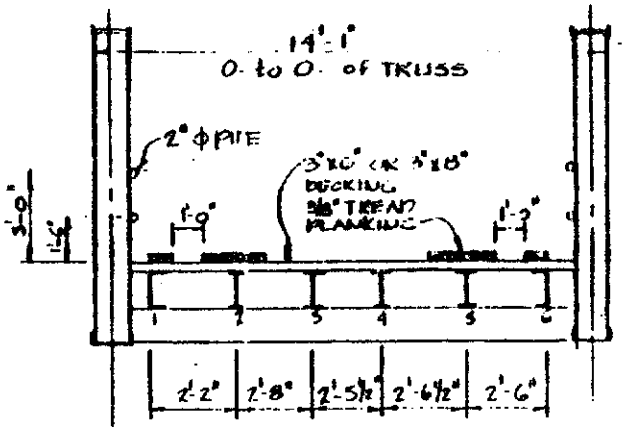
SECTION AA

PIER 2 SIMILAR - DIMENSIONS GIVEN

SUBSTRUCTURE DETAILS
BRIDGE NO. 80-A206-0.47
OVER ROUND LICK CREEK
SMITH COUNTY SHEET 2 of 4



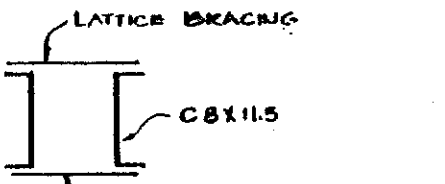
TRUSS DIAGRAM



SECTION THRU DECK @ SPAN 2

LL 2½" x 11/16"

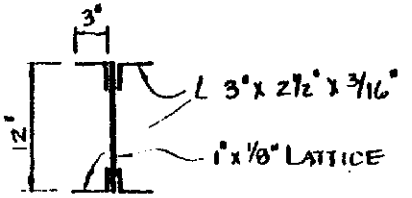
1, L1-L2,
3. L3-L4,
5



U1-U2, U2-U3,
U3-U4, L0-U1,
U4-L5

END

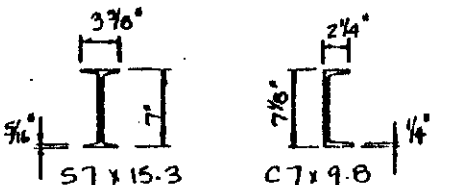
2, L3-U4



L1-U1, L2-U2,
L3-U3, L4-U4

BAR

1, U2-L3,



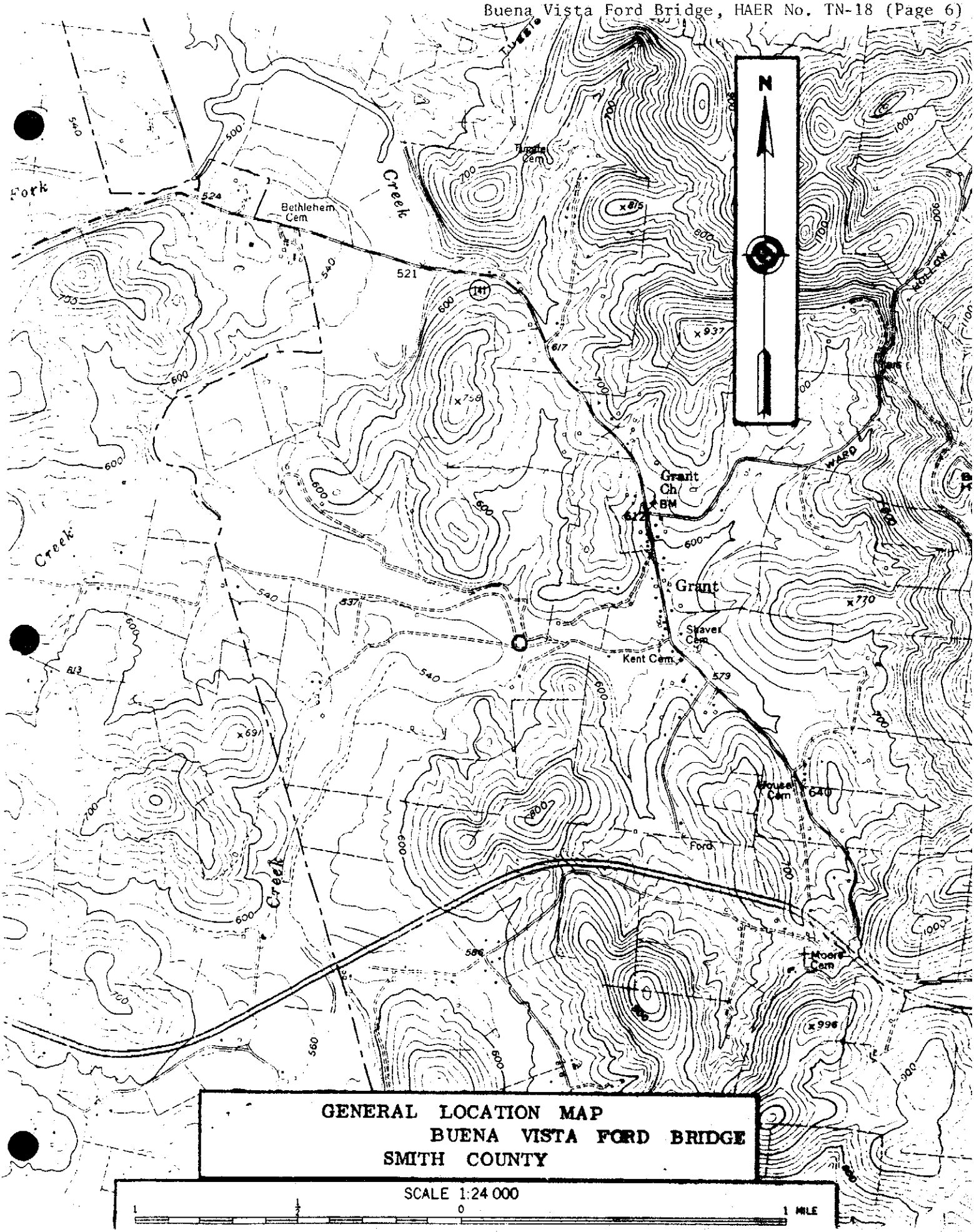
BEAMS 2 THRUS SPANS 2 & 3

BEAMS 1 & 6 SPANS 2 & 3

FLOOR BEAM SPAN 2

SOUTH TRUSS SHOWN
NORTH TRUSS SIMILAR

SUPERSTRUCTURE DETAILS
BRIDGE NO 80-A206-0.47
OVER ROUND LICK CREEK
SMITH COUNTY
SHEET 3 of 4



GENERAL LOCATION MAP
BUENA VISTA FORD BRIDGE
SMITH COUNTY